

CLAIMS

What is claimed:

1. A liquid conditioning system including a separator for separating a mixture of first and second liquids that, essentially, are not soluble in one another, the separator having an inlet for receiving fluids, a holding tank in fluid communication with the separator for receiving and holding the separated first and second liquids from the separator whereby, because of the difference in their specific gravities, the second liquid collects in the holding tank above the first liquid, a sump for collecting mixtures of the first and second liquids, the sump having an outlet for passing the mixtures of the first and second liquids from the sump, a venturi pump having first and second inlets and an outlet for passing fluids, a first fluid conductor connected at one end to the first inlet in the venturi pump and connected at its other end to the outlet of the sump for conveying to the venturi pump from the sump mixtures of the first and second liquids, a conduit connected at one end to the outlet of the venturi pump and connected at the other end to the inlet at the separator for conveying to the separator fluids exiting the venturi pump, a pumping means in fluid communication with one of the first and second liquids in the holding tank for pumping the liquid with which it is in fluid communication, the pumping means having an outlet for passing fluids, a second fluid conductor connected at one end to the second inlet of the venturi pump and connected at the other end to the outlet of the pumping means for conveying to the venturi pump the liquid pumped by the pumping means, passageways within the venturi pump for conveying from the second inlet of the venturi pump to the outlet of the venturi pump liquid pumped by the pumping means to the venturi pump, the passageways being in fluid communication with the first inlet in the venturi pump and having configurations such as to establish a negative pressure in the first inlet of the venturi pump when the liquid pumped

by the pumping means to the second inlet of the venturi pump passes from the second inlet of the venturi pump to the outlet of the venturi pump, whereby mixtures of the first and second liquids in the sump are drawn from the sump through the first fluid conductor into the venturi pump through the first inlet and passed to the separator along with the liquid pumped by the pumping means.

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2. The liquid conditioning system of claim 1 wherein the pumping means is in liquid communication with the first liquid.

3. The liquid conditioning system of claim 2 including an outlet in the holding tank, a conduit for conveying the first liquid to the outlet, and a return fluid conductor connected at one end to the outlet in the holding tank and having its other end disposed at the sump for returning the first liquid to the sump.

4. The liquid conditioning system of claim 3 wherein the separator is located within the holding tank.

5. The liquid conditioning system of claim 4 wherein the pumping means and the venturi pump are located within the holding tank.